

*Application Serial No. 10/771,585  
Amendment and Response April 5, 2005  
Reply to Office Action of October 5, 2004*

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A method for analyzing a sample containing particles to detect and characterize target particles having a plurality of detectable characteristics in a fixed volume capillary that contains a fluorescent background and which exhibits background characteristics, the method comprising:
  - (a) scanning the fixed volume capillary containing the sample to generate a plurality of channels of data, wherein each channel of data comprises a distinct detectable characteristic and a distinct background characteristic;
  - (b) sampling each of the channels of data to produce corresponding sets of pixel values;
  - (c) generating sets of enhanced pixel values by independently modifying each set of pixel values to selectively enhance spatial features that are indicative of a target particle;
  - (d) removing from one or more sets of enhanced pixel values the distinct background characteristic for the corresponding channel;
  - (e) independently establishing ~~noise~~ threshold values for the detection of said particles for each set of enhanced pixel values;

[[(g)]] (f) independently identifying, in each set of enhanced pixel values, groups of above-threshold pixels located in patterns that are diagnostic of said particles;

[[(h)]] (g) independently identifying, for each group of above-threshold pixels located in a diagnostic pattern in a particular set of enhanced pixel values, the corresponding below-threshold or at-threshold pixels in the remaining sets of enhanced pixel values; and

[[(i)]] (h) characterizing the target particles in the sample by analyzing the pixels independently identified in steps (f) and (g)-and-(h);

whereby particles are initially identified and analyzed in channels with above-threshold pixels located in patterns diagnostic of said particles, and said particles are then independently analyzed in all remaining channels by locating pixels in the same positions as the above-threshold pixels initially identified.

2. (Currently Amended) In a method for analyzing a sample containing particles to detect and characterize target particles having a plurality of detectable characteristics in a fixed volume capillary that contains a fluorescent background and which exhibits background characteristics, the method comprising:

(a) scanning the fixed volume capillary containing the sample to generate a plurality of channels of data, wherein each channel of data comprises a distinct detectable characteristic and a distinct background characteristic;

- (b) sampling each of the channels of data to produce corresponding sets of source pixel values;
- (c) summing the sets of source pixel values to generate a composite image;
- (d) calculating a threshold for particle detection in said composite image independently in each set of source pixel values;
- (e) performing particle detection in said composite image using said threshold independently in each set of source pixel values using the corresponding threshold;
- (f) identifying, for each particle identified in a particular set of source pixel values in step (e), the corresponding pixels in the remaining sets of source pixel values ~~identifying, for each particle identified in said composite image, the corresponding pixels in the sets of source pixel values~~; and
- (g) analyzing the pixels identified in step (f);  
~~the improvement comprising:~~
  - ~~(i) calculating the threshold for particle detection independently in each set of source pixel values;~~
  - ~~(ii) performing particle detection independently in each set of source pixel values using the corresponding threshold; and~~
  - ~~(iii) identifying, for each particle identified in a particular set of source pixel values in step (2), the corresponding pixels in the remaining sets of source pixel values, and~~
  - ~~(iv) analyzing the pixels identified in steps (2) and (3).~~

3. (Currently Amended) In a method for analyzing a sample containing particles to detect target particles having a plurality of detectable characteristics in a fixed volume capillary that contains a fluorescent background and which exhibits background characteristics, the method comprising;

- (a) scanning the fixed volume capillary containing the sample to generate a plurality of channels of data, wherein each channel of data comprises a distinct detectable characteristic and a distinct background characteristic;
- (b) sampling each of the channels of data to produce corresponding sets of source pixel values;
- (c) summing the sets of source pixel values to generate a composite image;
- ~~(d) calculating a threshold for particle detection independently in each set of source pixel values without first summing the source images in said composite image; and~~
- ~~(ed) performing particle detection independently in each set of source pixel values using the corresponding threshold in said composite image using said threshold;~~
- ~~the improvement comprising:~~
- ~~(i) calculating the threshold for particle detection independently in each set of source pixel values without first summing the source images, and~~
- ~~(ii) performing particle detection independently in each set of source pixel values using the corresponding threshold.~~